

Victor Valley Water Issues

A presentation
prepared for:



Water Policy Task Force

February 10, 2005

Randy Hill, PE

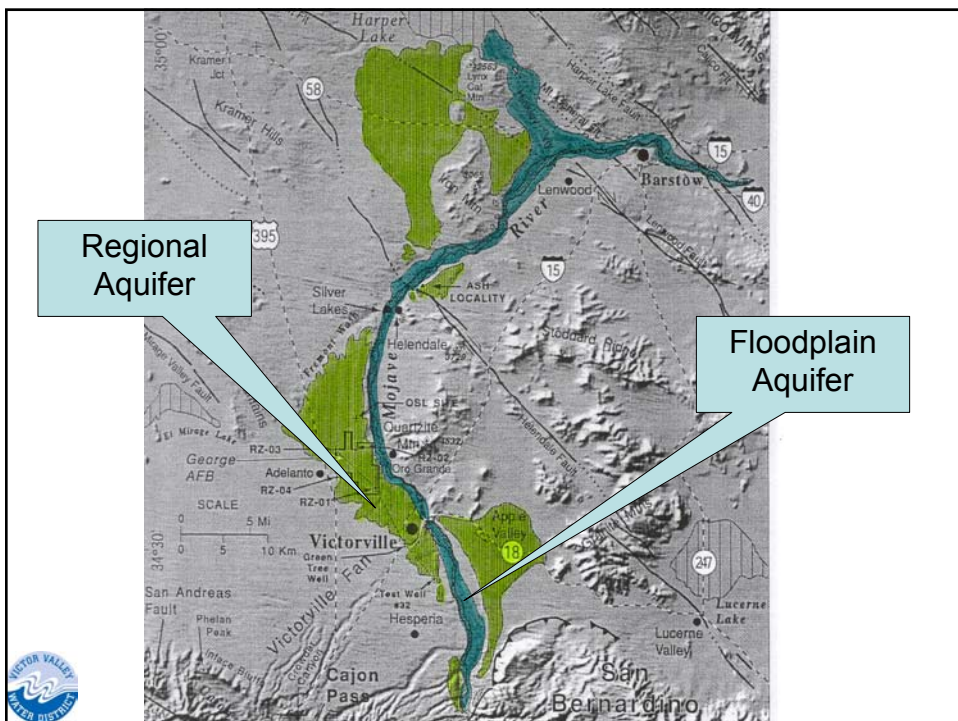
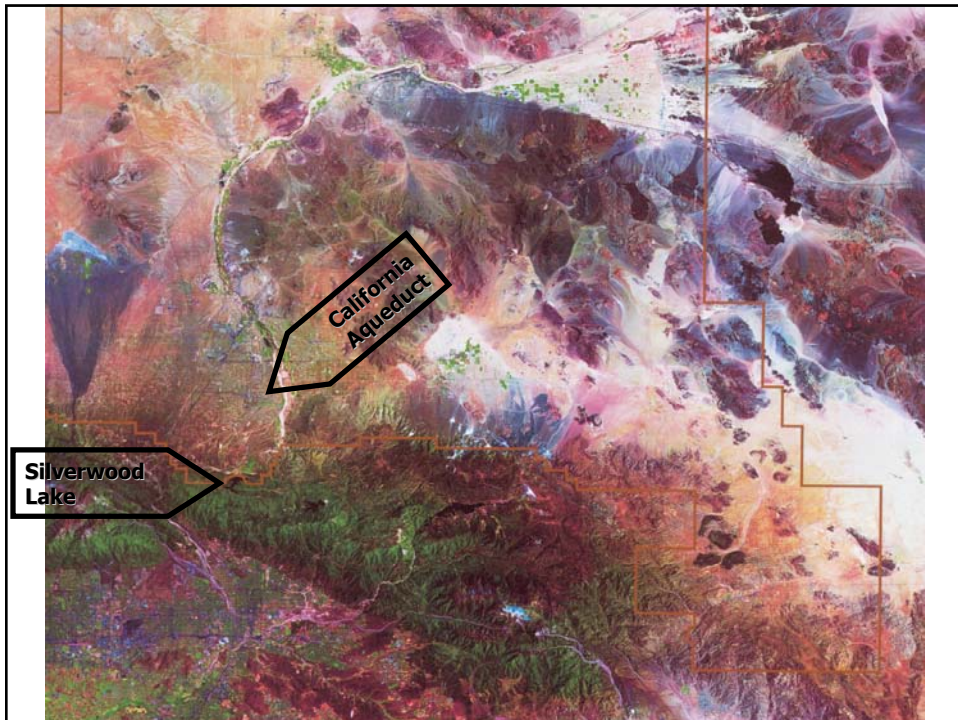


About Us

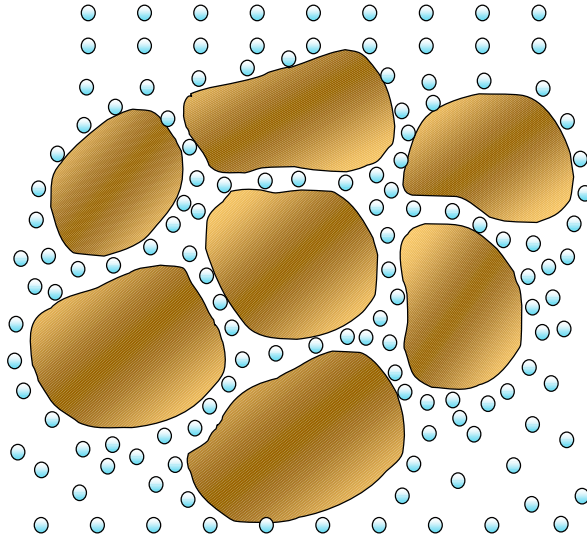
- **55 square mile service area**
- **20,000 service connections**
 - 93% residential
 - 6% business, commercial, industrial
 - 1% public agencies
- **60 full time employees**
- **\$18 million annual operating budget**
- **\$25 million capital budget**

Water Supply

- **100% Groundwater**
- **20,000 AF/yr**

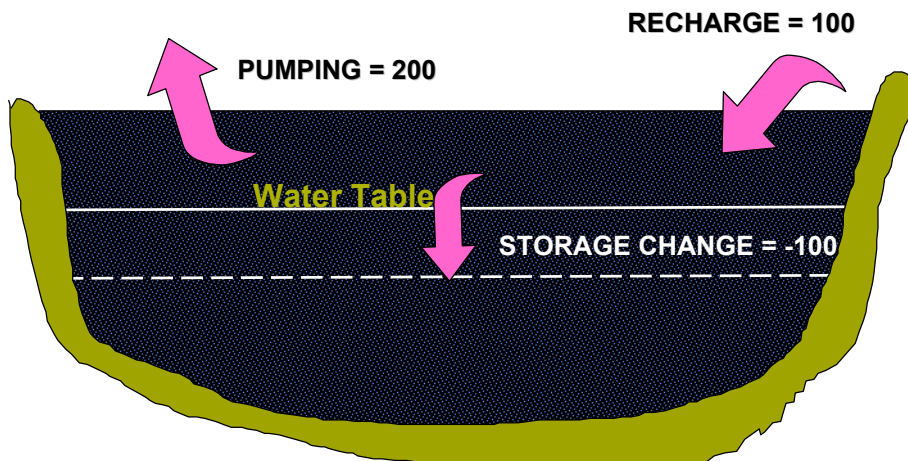


Groundwater Storage & Movement



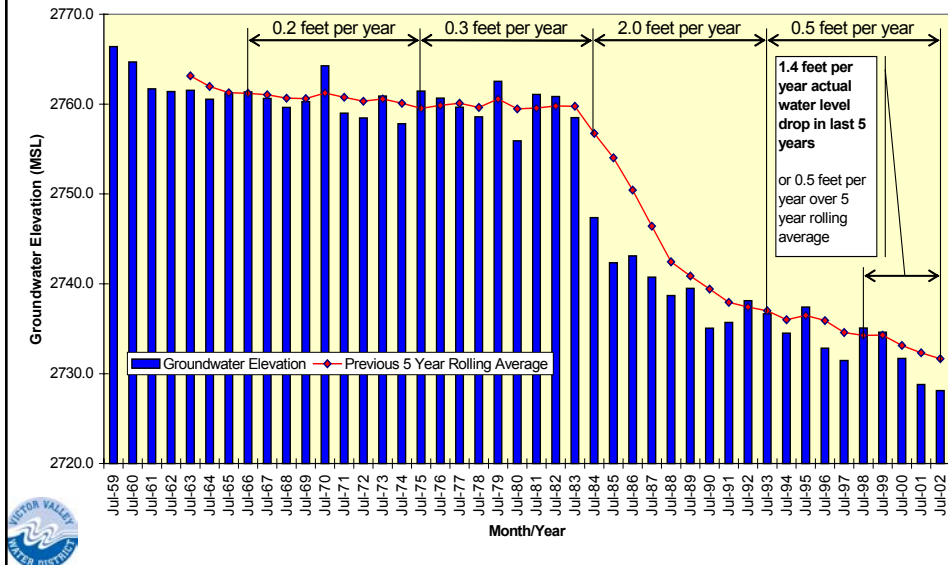
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Safe Yield (simplified)

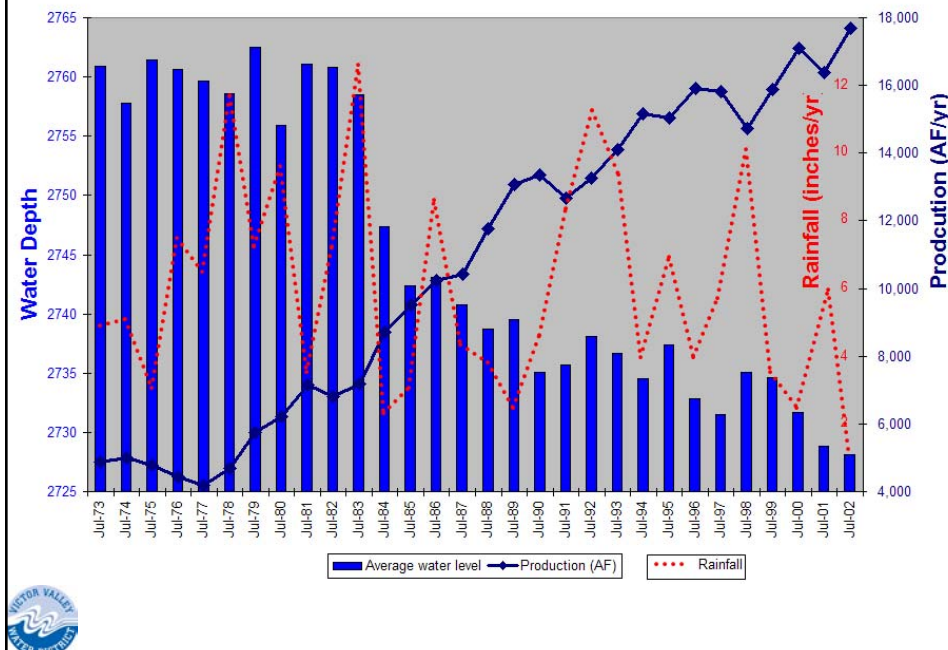


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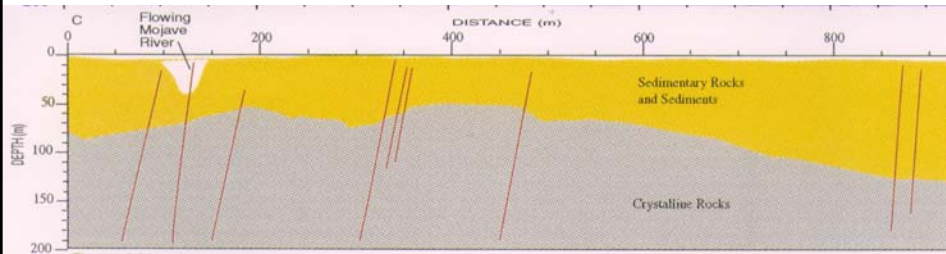
Yearly Composite Water Levels



Water Level, Production, & Rainfall



Assessment of Groundwater In Storage Beneath Victorville

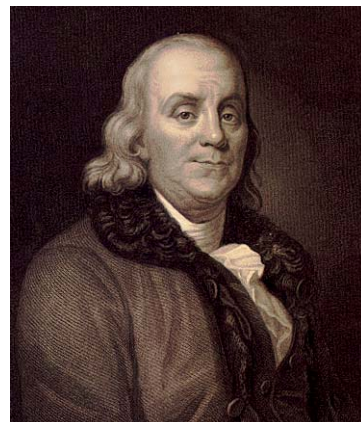


- Rainfall is not a significant source of local groundwater supply
- 103,000 AF available storage space from overpumping (6 year supply at current demand)
- If we do nothing complete groundwater depletion in **20-30 years**



“We realize the value of water when the well runs dry.”

Benjamin Franklin



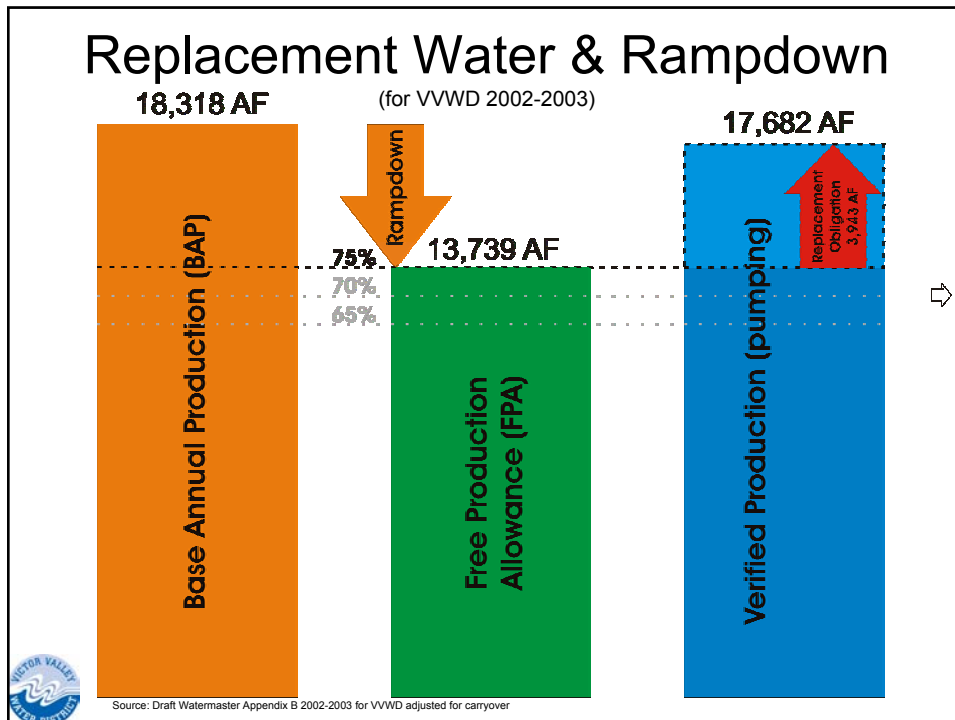
A Friendly Water Rights Discussion



An Adjudicated Basin

- The groundwater basin has established water rights
- The rules in effect will eventually force the basin to be hydraulically balanced





The Impact of Rampdown



Buying Replacement Water

Replacement Obligations can be met by:

- Buying additional water rights
(currently \$1,700 /AF in limited volume)
- Buying imported water from MWA
(currently \$246/ AF)
- Leasing groundwater for one year from other right holders
(currently \$70 / AF)



Proving Water Supply

(Before large developments can be approved)

- New laws require documentation of **sustainable** water supply for new developments – 20 years out
(SB610 & SB221)
- Applies to any project with a combined capacity of 1,300 gpm
- We must provide this documentation
(1220 in 2003, 1600 & 787 in 2004)

VVWD Planning Efforts

- *Water Master Plan* and Program EIR completed in 1995
- *Urban Water Management Plan* updated in 2000
- *Long Range Water Supply Review* completed in 2001
- Water treatment plant feasibility study completed in February 2001
- **New *Water Master Plan* and EIR currently underway**



Regional Water Management Plan

- MWA is the wholesaler of State Water Project (SWP) water
- MWA is working with local agencies to update the *Regional Water Management Plan* (RWMP)
- The *RWMP* predicts we will use 100% of our SWP entitlement by 2020



Regional Water Management Plan

- VVWD supply options included in the *RWMP* are:
 - Oro Grande Wash percolation
 - Injection through wells
 - Conservation 10-20%
 - VVWRA recycled water
 - Future water treatment plant



Why we are Replenishing the Groundwater

- We need to secure ongoing **reliable** water supplies to allow continued growth
- VVWD Customers consume 14,000 acre-feet per year more than nature provides
- Water stored beneath Victorville ensures a **local supply**



Imported Water Supply



MWA Service Area

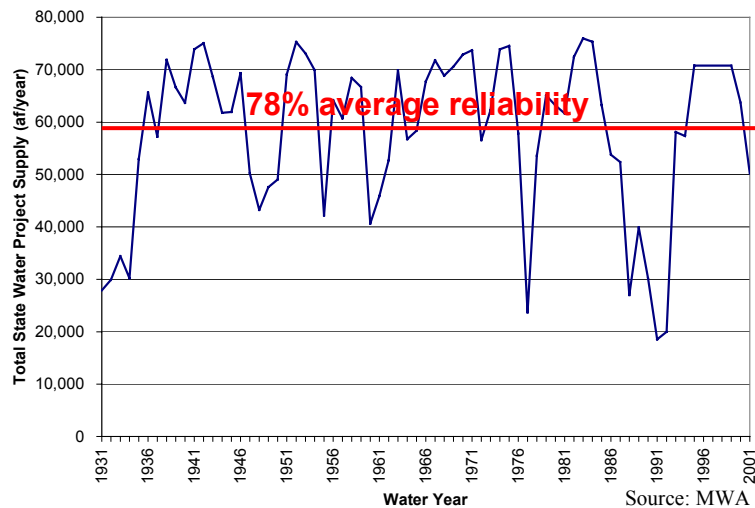




Percolation Basins

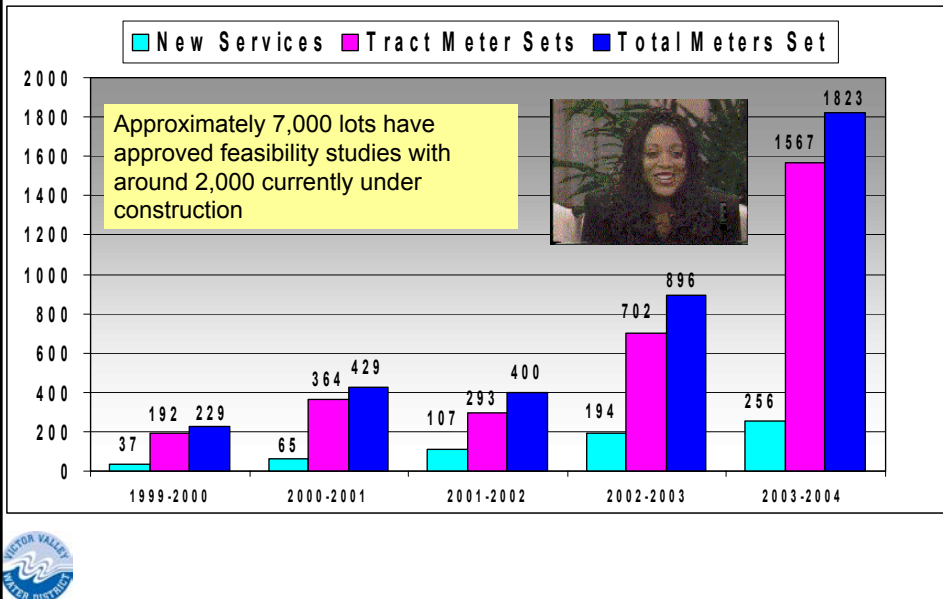


Annual State Water Project Supply Reliability



Source: MWA RWMP

New Meter Sets at Record Levels



Supply & Demand

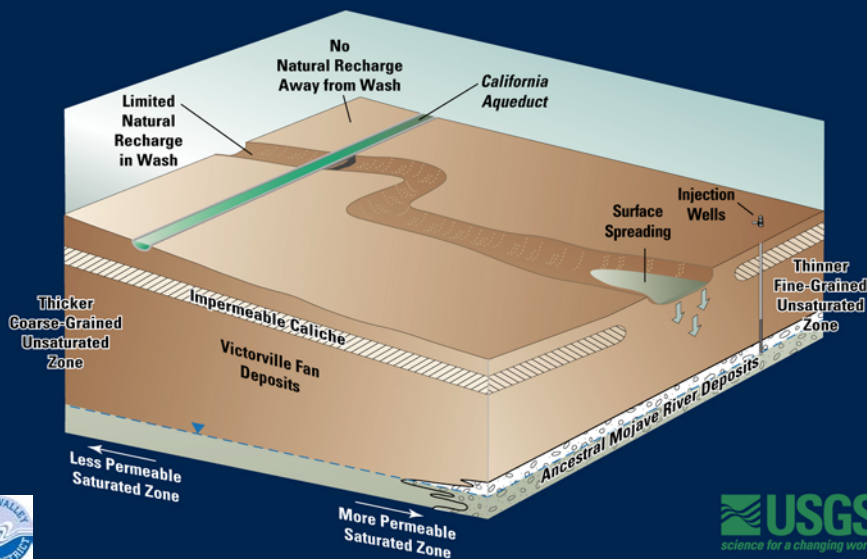
- **Increase Supply**
 - Use Imported Water: percolate, inject, treatment plant
 - Recycle Water
- **Decrease Demand**
 - Turf retrofits and weather based controllers
 - Low water use landscaping
 - Conservation devices and education

VVWD Supply Projects

- **Pilot Recharge Projects**
(Oro Grande Wash Percolation basins in various states of testing)
- **Groundwater Injection (ASR)**
(wells now injecting treated SWP water
Private/Public partnership with the High Desert Power Project)
- **Water Treatment Plant**
(feasibility study completed, for future use)
- **Conservation**
Recently formed conservation workgroup
Alliance for Water Awareness and Conservation (AWAC) is exploring
 - Cash for Grass
 - Weather based irrigation controllers



NATURAL AND ARTIFICIAL RECHARGE THROUGH THE THICK UNSATURATED ZONE UNDERLYING THE VICTORVILLE FAN



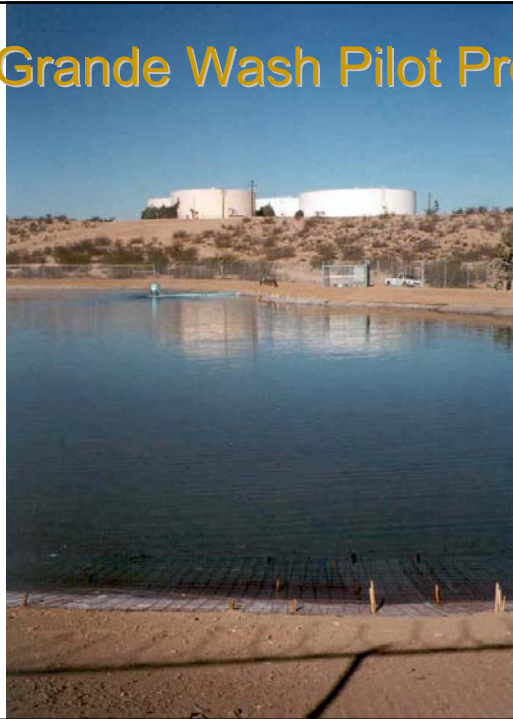
Oro Grande Wash Pilot Project

(VVWD & BMWD & MWA)

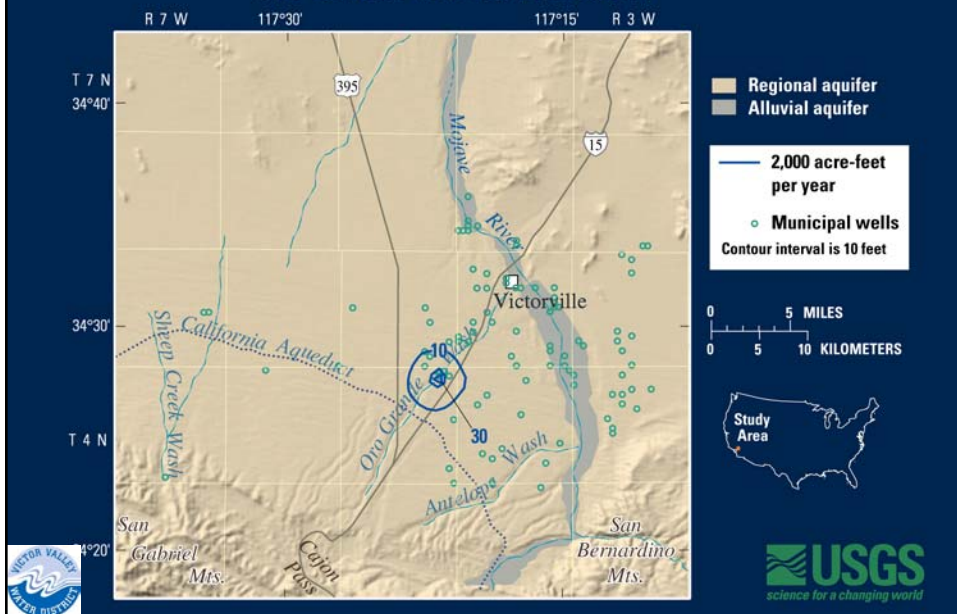
- Began percolating October 1, 2002
- 482 acre-feet percolated so far
(over 277 operating days, 1.7 feet per day average)
- Estimated operating percolation rate 1-3 feet/day
- Depth to groundwater is 400 feet deep
- Some water has already reached groundwater
(after 4 months)
- Main water front is 316 feet deep
- Study shows **it is feasible to replenish** our groundwater by percolation in the Regional Aquifer

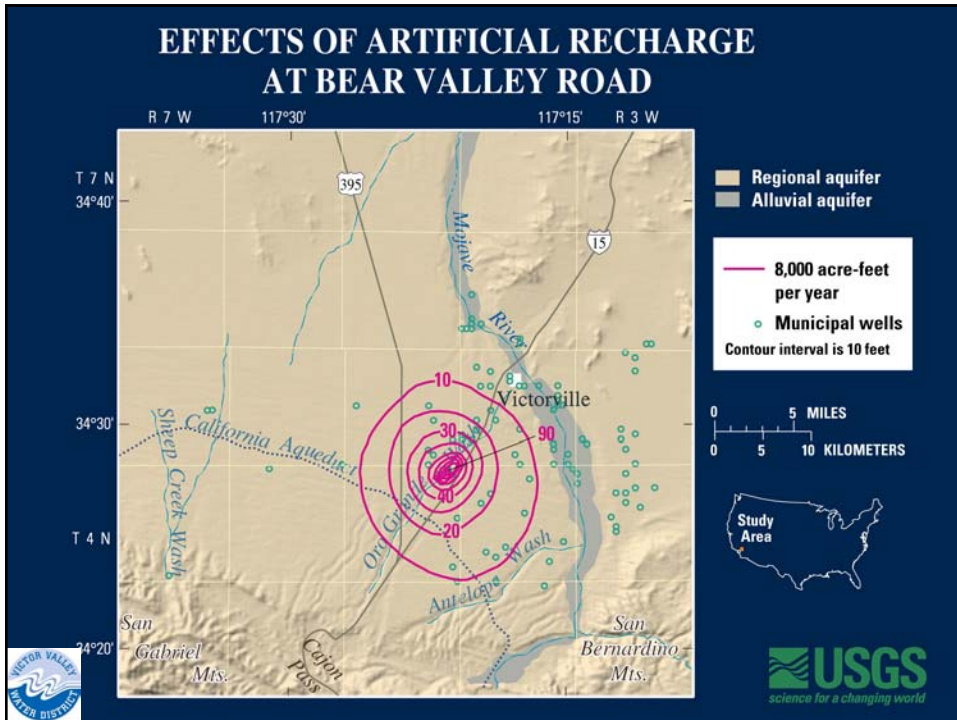


Oro Grande Wash Pilot Project



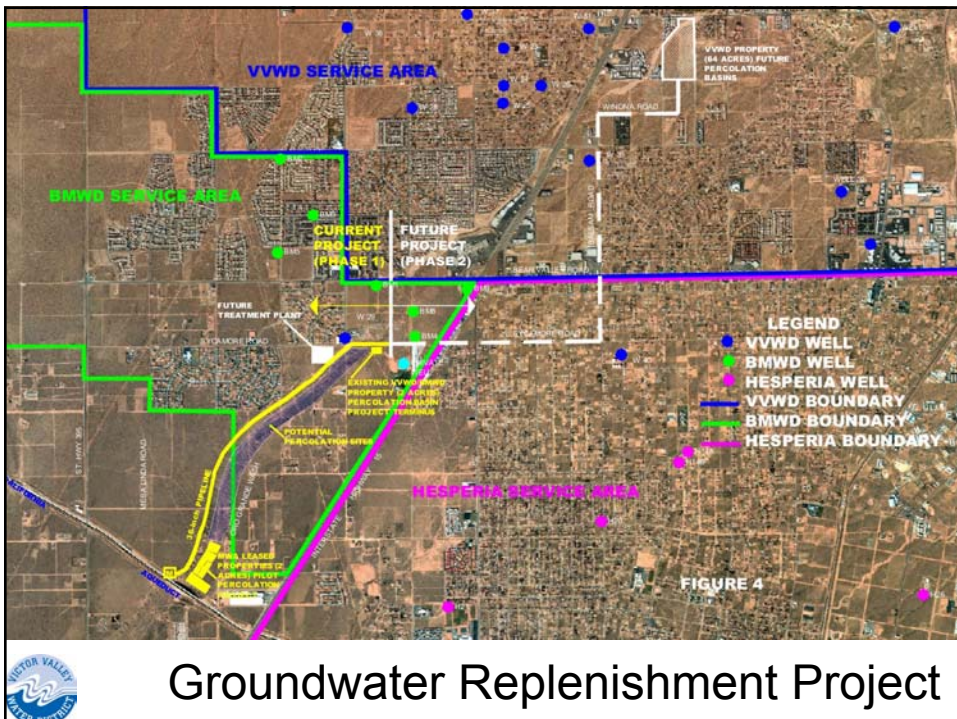
EFFECTS OF ARTIFICIAL RECHARGE AT BEAR VALLEY ROAD





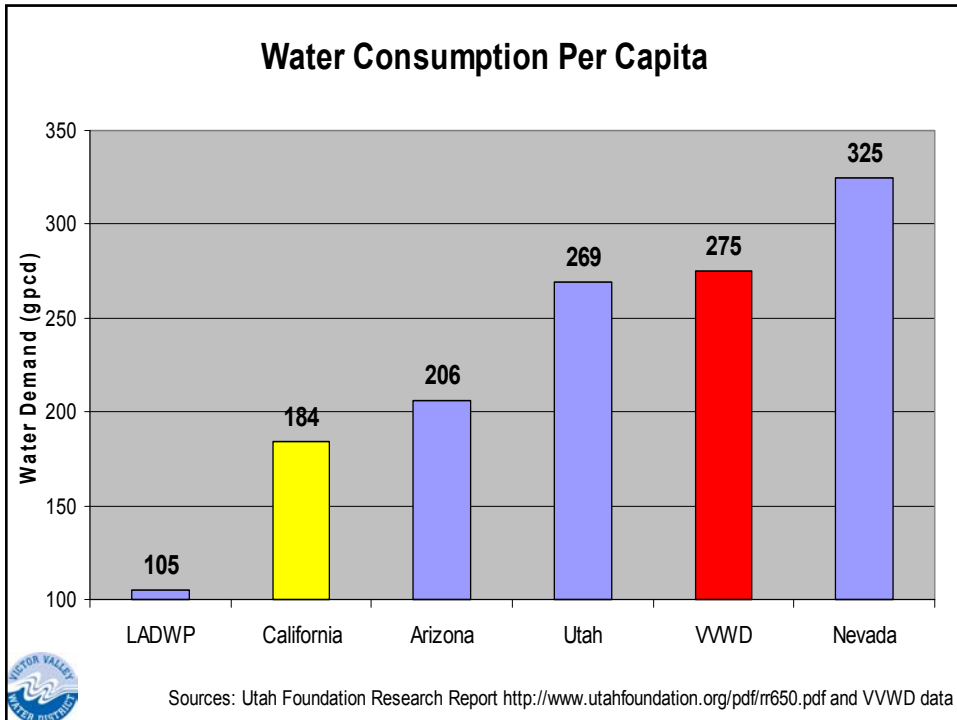
Possible Future Percolation Basins





Water Conservation as a New Supply Source





CA\$H for GRA\$\$

Turf Replacement Programs (\$0.25 to \$1.00 per square foot)

- **City of Albuquerque**
\$0.25 per sf -- \$500 residential cap \$7000 non-residential cap
 Plants from required list, no spray irrigation, impervious plastic not permitted
<http://www.cabq.gov/waterconservation/retrofit.html>
- **Crescenta Valley WD**
\$0.50 per sf -- \$400 cap
<http://www.cvwd.com/pages/Forms/Turf%20Replacement%20Rebate%20Program.pdf>
- **East Bay Municipal Utility District**
\$1.00 per sf for deck or hardscape; 50% of irrigation parts; 25% of plants, mulch, and gravel
 labor not reimbursed, mandatory 1 hour meeting, on site visit
http://www.ebmud.com/conserving_&_recycling/residential/landscape_rebate/default.htm
- **Southern Nevada Water Authority**
\$0.40 per sf -- \$50,000 cap
http://www.snwa.com/html/wsl_home.html

VVWD Low Flow Toilet Rebates

- \$60 rebate for toilets installed before 1994
- Toilet giveaway May 8
- Advertising:
 - Theatres
 - Radio
 - Cable TV
 - Newspapers
- Obtained \$50,000 grant



Automatic Weather-Based Watering

(an emerging technology)

- Irrigation run times can be automatically set by:
 - Temperature
 - Solar Radiation
 - Weather station evaporation calculation
- The unit automatically adjusts and sets its own irrigation schedule



—Source <http://aquacraft.com/weathert.htm>

